

Abstract

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2 An elongated truss boom structure is adapted to be flattened and coiled to a stowed
3 configuration. The truss boom includes longerons, battens, and diagonals. A fixed ladder
4 shaped structure is formed by a plurality of fixedly coupled battens which interconnect two
5 adjacent longerons. The truss boom is flattened for stowage by arranging all of the
6 longerons coplanar to the plane of the fixed ladder shaped structure. The longerons
7 preferably have a corrugated cross section. For stowage the longeron is heated and
8 compressed into a ribbon shaped cross section, and upon deployment the longeron is heated
9 to restore its corrugated cross section. A mechanical assembly machine includes a drum, a
10 stowed flattened truss boom rolled into a coil around the drum, a device for unrolling the
11 coil, an actuating and locking mechanism, and a control arm which connects the actuating
12 and locking mechanism to the drum.